



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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20NR-04

Job Sheet 186967



Part No: 20NR-04

Job Qty: 2 ea

Part Name: Solenoid



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/23/18

Job Tracking No:

Due Date: 12/6/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG 20NR-04 Rev 6 IPP Rev A 18.02.02 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	4 Ea		12/6/18	0.00	0.00	Start Up Small Fab-4		SB
100	Small Fab	4 pcs		12/6/18	0.08	0.40	Small Fab-9		AP
110	QC	4 pcs		12/6/18	0.00	0.00	QC5		SB
130	Packaging	4 pcs		12/6/18	0.00	0.00	Packaging3-2		SB
140	QC21-FG	4 Ea		12/6/18	0.00	0.00	QC21		CMJ 18.12.06

Part Op 100 - 1-Assemble as per DWG sheet 1. 2-Center 20NR-03 in shaft of solenoid as per note 1. ***Note 32446 22-16 crimp
Descriptions: connectors supplied loose as per note 2***
130 - Bag and tag

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
20NR-04-1	Solenoid	4 Ea (1 ea)	90-Start up Operation	5076861
20NR-04-3	Spacer	4 Ea (1 ea)	90-Start up Operation	5045989
32446	Crimp Terminal	8 Ea (2 ea)	90-Start up Operation	5047075
92383A695	Slotted Spring Pin	4 Ea (1 ea)	90-Start up Operation	5040831

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	20NR-04-1	4	4	0
	20NR-04-3	4	37	0
	32446			
	92383A695			



Container No: S135498



Part: 20NR-04
Job No: 186967
Serial No/Batch: S135498

Revision: 6
Inspector:
Exp Date:
Instructions:

1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 12/06/18

DAS
70
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

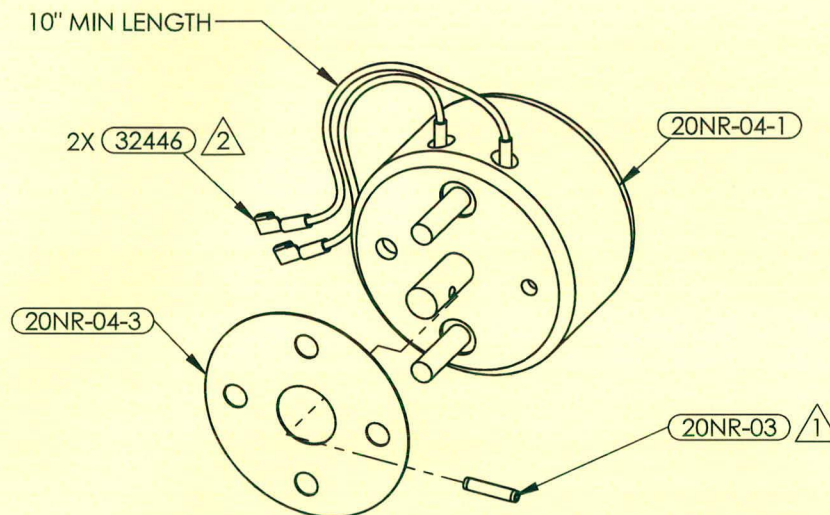
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5		AS DRAWN BY CANAM.	7/18/2013	CFS	
6	14-0206	CH'D TITLEBLOCK WAS RED BARN IS DART. 20NR-04-1 ADDED ENGRAVE BATCH # NOTE. ADDED 20NR-04-3 SPACER, 2X 32446 CONNECTORS. ADDED MIN LENGTH NOTE.	11/3/2014	DPD	JAG



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 186967 MJS
1871-23

NOTE:

- 1 CENTER 20NR-03 IN SHAFT OF SOLENOID.
2 CONNECTORS SUPPLIED LOOSE.

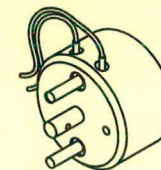
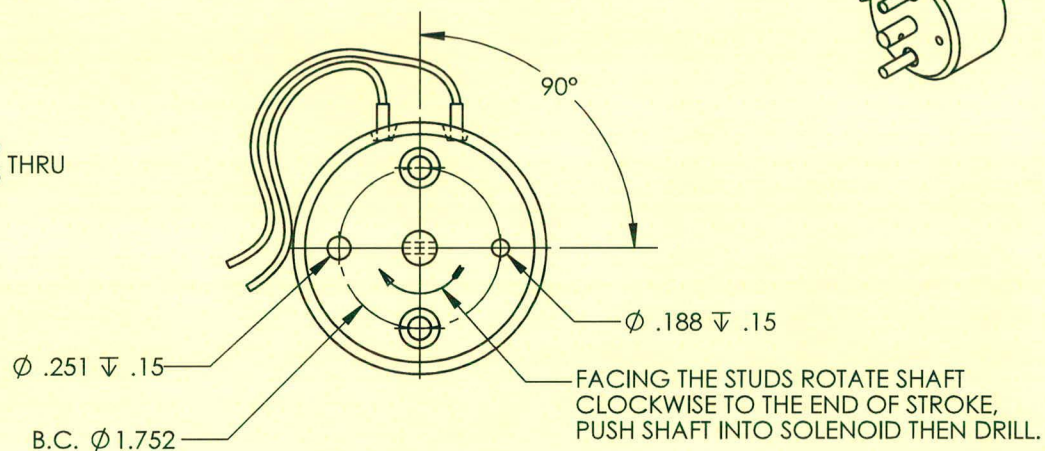
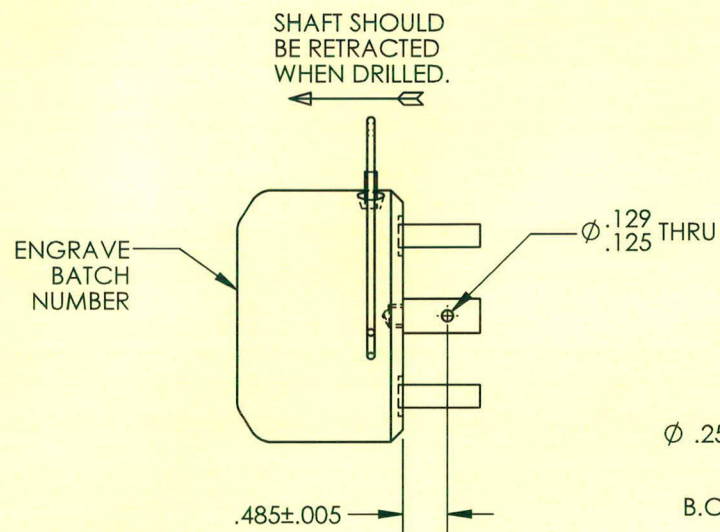
USED ON
20NR
8NR

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. 20NR-04	REV 6
MAT'L	DRAWN BY: CANAM
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1	APPROVED <i>D Weil</i>
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	HEAT TREAT FINISH SPEC
SCALE 1:2	DATE 12/1/1998
SHEET 1 OF 3	

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
		B/O	20NR-03	1	SOLENOID PIN	S.S.	Ø1/8 X 5/8 MCMaster-CARR #92383A695	1
		B/O	20NR-04-1	1	SOLENOID		H-1127-020 (MODIFIED)	2
			20NR-04-3	1	SPACER	PETG	Ø2-5/8 X .020	3
		B/O	32446	2	22-16 AWG KNIFE CONNECTOR		ALLIED ELECTRONICS 32446	1

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0206	20NR-04-1 ADDED ENGRAVE BATCH # NOTE.	11/3/2014	DPD	JAG



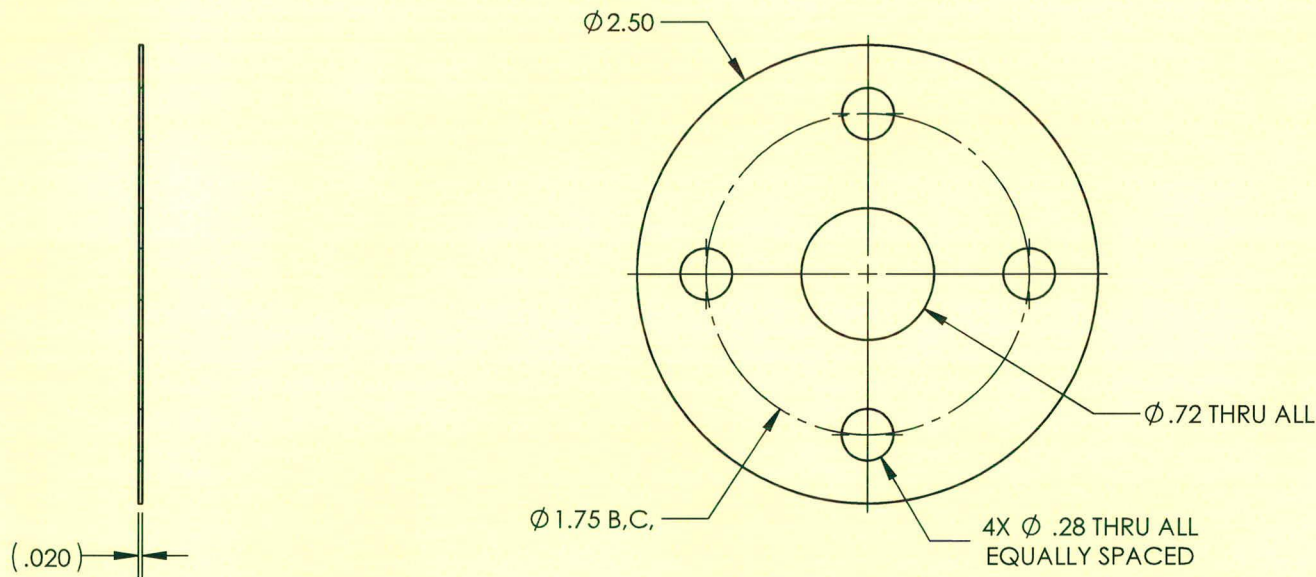
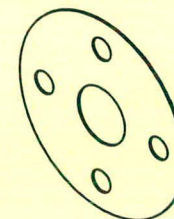
20NR-04-1

SOLENOID

DART AEROSPACE	
TITLE SOLENOID	
DWG NO. 20NR-04-1	REV 6
MAT'L	DRAWN BY: CANAM
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX $\pm .005$.XX $\pm .01$.X $\pm .1$ FRACTIONS $\pm 1/8$ ANGLES $\pm 5^\circ$	APPROVED <i>D Weil</i>
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	HEAT TREAT
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	FINISH
	SPEC
	USED ON MODEL
SCALE 1:2	DATE 12/1/1995
SHEET 2 OF 3	

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REVISIONS				DATE	INITIAL	APPROVED
REV	ECR	DESCRIPTION				
1	14-0206	20NR-04-3 ADDED SPACER.			11/4/2014	DPD JAG



(20NR-04-3)

SPACER

DART AEROSPACE	
TITLE SOLENOID	
DWG NO. 20NR-04-3	REV 6
MAT'L PETG	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:1	DATE 10/30/2012 SHEET 3 OF 3

